

Habitability Research Priorities for the International Space Station and Beyond. Mihriban Whitmore, Jurine A. Adolf, and Barbara J. Woolford, *Aviation Space Environmental Medicine* 2000; 71(9, Suppl.):A122-5.

Abstract: Advanced technology and the desire to explore space have resulted in increasingly longer manned space missions. Long Duration Space Flights (LDSF) have provided a considerable amount of scientific research on the ability of humans to adapt and function in microgravity environments. In addition, studies conducted in analogous environments, such as winter-over expeditions in Antarctica, have complemented the scientific understanding of human performance in LDSF. These findings indicate long duration missions may take a toll on the individual, both physiologically and psychologically, with potential impacts on performance. Significant factors in any manned LDSF are habitability, workload and performance. They are interrelated and influence one another, and therefore necessitate an integrated research approach. An integral part of this approach will be identifying and developing tools not only for assessment of habitability, workload, and performance, but also for prediction of these factors as well. In addition, these tools will be used to identify and provide countermeasures to minimize decrements and maximize mission success. The purpose of this paper is to identify research goals and methods for the International Space Station (ISS) in order to identify critical factors and level of impact on habitability, workload, and performance, and to develop and validate countermeasures. Overall, this approach will provide the groundwork for creating an optimal environment in which to live and work onboard ISS as well as preparing for longer planetary missions.